

IN THE CLAIMS

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1-42. (Previously Canceled)

43. (Currently Amended) A method of compressing data, wherein ~~said~~ the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and ~~retaining~~ remaining bit symbols, the method comprising the steps of:

(a) entropy encoding a number representative of ~~said~~ the number of leading zero bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding said the current transform coefficient, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

(b) processing another transform coefficient, not previously entropy coded, in accordance with step (a).

44. (Canceled)

45. (Currently Amended) A method as claimed in Claim 43, ~~wherein the method includes a further~~ comprising the step of ~~quantising said~~ quantizing the transform coefficients.

46. (Currently Amended) A method as claimed in claim 43, wherein ~~said~~ the representative number equals the number of leading zero bit symbols.

47. (Currently Amended) A method as claimed in claim ~~44~~ 43, wherein said context is determined from an arrangement of surrounding transform coefficients.

48. (Currently Amended) A method as claimed in claim 47, wherein ~~said~~ the surrounding transform coefficients are previously encoded transform coefficients.

49. (Canceled)

50. (Currently Amended) A method as claimed in claim 43, ~~wherein said method includes a further~~ comprising the step of coding ~~said~~ the remaining bit symbols of the current transform coefficient.

51. (Currently Amended) A method of compressing data, wherein ~~said~~ the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the method comprising the steps of:

(a) entropy encoding one of ~~said the~~ bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy coded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

(b) repeating step (a) a predetermined number of times for the current transform coefficient; and

(c) processing another transform coefficient, not previously entropy coded, in accordance with steps (a) and (b).

52. (Canceled)

53. (Currently Amended) A method as claimed in claim 51, ~~wherein the method includes a further~~ comprising the step of ~~quantising said~~ quantizing the transform coefficients.

54. (Canceled)

55. (Currently Amended) A method as claimed in claim ~~52~~ 51, wherein said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, has been encoded.

56. (Currently Amended) A method as claimed in claim 51, wherein ~~said~~ the transform coefficients are represented in a bit-plane representation and ~~said the~~ surrounding bit symbols are bit symbols in a current bit-plane.

57. (Previously Amended) A method as claimed in claim 43, wherein said entropy encoding is performed by an arithmetic coder.

58. (Currently Amended) A method as claimed 43, ~~wherein said method~~ ~~includes a further~~ comprising the step of Discrete Wavelet Transforming data to produce ~~said the~~ plurality of transform coefficients.

59. (Currently Amended) A method of decompressing data, wherein ~~said~~ the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the method comprising the steps of:

(a) entropy decoding an encoded number representative of ~~said~~ the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding ~~said the~~ current transform coefficient, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

(b) processing another transform coefficient in accordance with step (a).

60. (Canceled)

61. (Currently Amended) A method as claimed in claim 59, ~~wherein the method includes a further~~ comprising the step of inverse ~~quantising said~~ quantizing the transform coefficients.

62. (Currently Amended) A method as ~~claimed~~ claimed in claim 59, wherein ~~said~~ the representative number equals the number of leading zero bit symbols.

63. (Currently Amended) A method as claimed in claim ~~60~~ 59, wherein said context is determined from an arrangement of surrounding transform coefficients.

64. (Currently Amended) A method as claimed in claim 63, wherein ~~said~~ the surrounding transform coefficients are previously decoded transform coefficients.

65. (Canceled)

66. (Currently Amended) A method as claimed in claim 59, ~~wherein said method includes a further~~ comprising the step of decoding the encoded ~~said~~ remaining bit symbols of the current transform coefficient.

67. (Currently Amended) A method of decompressing data, wherein ~~said~~ the data once decompressed comprises a plurality of transform coefficients, and each

transform coefficient is expressible in a format comprising a plurality of bit symbols, the method comprising the steps of:

- (a) entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;
- (b) repeating step (a) a predetermined number of times for the current transform; and
- (c) generating another transform coefficient in accordance with steps (a) and (b).

68. (Canceled)

69. (Currently Amended) A method as claimed in claim 67, ~~wherein the method includes a further~~ comprising the step of inverse quantising said quantizing the transform coefficients.

70. (Canceled)

71. (Currently Amended) A method as claimed in claim ~~68~~ 67, wherein said context of surrounding bit symbols includes information as to whether or not a most

significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, is encoded or decoded.

72. (Currently Amended) A method as claimed in claim 67, wherein ~~said~~ the transform coefficients are represented in a bit-plane representation and ~~said~~ the surrounding bit symbols are bit symbols in a current bit-plane.

73. (Previously Amended) A method as claimed in claim 59, wherein said entropy decoding is performed by an arithmetic coder.

74. (Currently Amended) A method as claimed in claim 59, wherein ~~said~~ ~~method includes a further~~ comprising the step for of inverse Discrete Wavelet Transforming ~~said~~ the transform coefficients.

75. (Currently Amended) An apparatus for compressing data, wherein ~~said~~ the data comprises a plurality of transform coefficients and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the apparatus including:

entropy encoder means for entropy encoding a number representative of ~~said~~ the number of leading zero bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding ~~said~~ the current transform coefficient, said context

being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

processor means for processing another transform coefficient, not previously entropy coded, in accordance with the operations of the entropy encoder means.

76. (Canceled)

77. (Currently Amended) An apparatus according to claim 75, wherein the apparatus further includes ~~quantisation~~ quantization means for ~~quantising said~~ quantizing the transform coefficients.

78. (Currently Amended) An apparatus as claimed in claim 75, wherein ~~said~~ the representative number equals the number of leading zero bit symbols.

79. (Currently Amended) An apparatus as claimed in claim ~~76~~ 75, wherein said context is determined from an arrangement of surrounding transform coefficients.

80. (Currently Amended) An apparatus as claimed in claim ~~75~~ 79, wherein ~~said~~ the surrounding transform coefficients are previously encoded transform coefficients.

81-91. (Previously Canceled)

92. (Currently Amended) An apparatus as claimed in claim 75, wherein said ~~method includes a further step of coding said~~ apparatus codes the remaining bit symbols of the current transform coefficient.

93. (Currently Amended) An apparatus for compressing data, wherein the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the apparatus including:

entropy encoder means for entropy encoding one of ~~said~~ the bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy encoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy encoder a predetermined number of times for the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy encoder means and repetition means.

94. (Canceled)

95. (Currently Amended) An apparatus as claimed in claim 93, wherein the apparatus includes ~~quantising~~ quantizing means for ~~quantising said~~ quantizing the transform coefficients.

96. (Canceled)

97. (Currently Amended) An apparatus as claimed in claim ~~94~~ 93, wherein said context of surrounding bit symbols includes information as to whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, has been encoded.

98. (Currently Amended) An apparatus as claimed in claim 93, wherein ~~said~~ the transform coefficients are represented in a bit-plane representation and ~~said~~ the surrounding bit symbols are bit symbols in a current bit-plane.

99. (Previously Amended) An apparatus as claimed in claim 75, wherein said entropy encoder means is an arithmetic coder.

100. (Currently Amended) An apparatus as claimed in claim 75, wherein said apparatus further includes a transform means for Discrete Wavelet Transforming data to produce the plurality of transforming coefficients.

101. (Currently Amended) An apparatus for decompressing data, wherein ~~said~~ the data once decompressed comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the apparatus including:

entropy decoder means for ~~entropy~~ing entropy decoding an encoded number representative of ~~said the~~ number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding ~~said the~~ current coefficient, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy decoder means.

102. (Canceled)

103. (Currently Amended) An apparatus as claimed in claim 101, ~~wherein the method includes~~ further comprising inverse ~~quantisation~~ quantization means for inverse ~~quantising said~~ quantizing the transform coefficients.

104. (Currently Amended) An apparatus as claimed in claim 101, wherein ~~said the~~ representative number equals the number of leading zero bit symbols.

105. (Currently Amended) An apparatus as claimed in claim ~~102~~ 101, wherein said context is determined from an arrangement of surrounding transform coefficients.

106. (Currently Amended) An apparatus as claimed in claim 105, wherein ~~said the~~ surrounding transform coefficients are previously decoded transform coefficients.

107. (Canceled)

108. (Currently Amended) An apparatus as claimed in claim 101, wherein said ~~method includes a further step of decoding~~ apparatus decodes the encoded said remaining bit symbols of the current transform coefficient.

109. (Currently Amended) An apparatus for decompressing data, wherein ~~said the~~ data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the apparatus including:

entropy decoder means for entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy decoder means a redetermined number of times for the current transform coefficient; and

generation means for generating another transform coefficient in accordance with the operation of the entropy decoder means and the repetition means.

110. (Canceled)

111. (Currently Amended) An apparatus as claimed in claim 109, wherein the apparatus includes inverse ~~quantisation~~ quantization means for inverse ~~quantising said~~ quantizing the transform coefficients.

112. (Canceled)

113. (Currently Amended) An apparatus as claimed in claim ~~110~~ 109, wherein said context of surrounding bit symbols includes information as whether or not a most significant bit of at least one transform coefficient spatially adjacent, to the current transform coefficient, is encoded or decoded.

114. (Currently Amended) An apparatus as claimed in claim 109, wherein ~~said~~ the transform coefficients are represented in a bit-plane representation and ~~said~~ the surrounding bit symbols are bit symbols in a current bit-plane.

115. (Previously Amended) An apparatus as claimed in claim 101, wherein said entropy decoder means is an arithmetic coder.

116. (Previously Amended) An apparatus as claimed in 101, wherein said apparatus further includes an inverse transform means for inverse Discrete Wavelet Transforming the transform coefficients.

117. (Currently Amended) A computer readable medium comprising a computer program for compressing data, wherein ~~said~~ the data comprises a plurality of transform coefficients, and each transform coefficient is expressible in a format including a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the computer program comprising:

entropy encoder means for entropy encoding a number representative of ~~said~~ the number of leading zero bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding ~~said~~ the current transform coefficient, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

processor means for processing another transform coefficient, not previously entropy coded, in accordance with the operations of the entropy encoder means.

118. (Currently Amended) A computer readable medium comprising a computer program for compressing data, wherein the data comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the computer program comprising:

entropy encoder means for entropy encoding one of ~~said~~ the bit symbols, not previously entropy coded, of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether or not the most significant bit symbol of the current coefficient has been previously entropy encoded, said context

being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy encoder a predetermined number of times for the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy encoder means and repetition means.

119. (Currently Amended) A computer readable medium comprising a computer program for decompressing data, wherein ~~said~~ the data once decompressed comprises a plurality of transform coefficients and each transform coefficient is expressible in a format comprising a plurality of bit symbols, the format comprising a number of leading zero bit symbols and remaining bit symbols, the computer program comprising:

entropy decoder means for entropy decoding an encoded number representative of ~~said~~ the number of leading zero bit symbols of a current transform coefficient based on a context of a number of transform coefficients or part thereof surrounding ~~said~~ the current coefficient, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient; and

processor means for processing another transform coefficient in accordance with the operations of the entropy decoder means.

120. (Currently Amended) A computer readable medium comprising a computer program for decompressing data, wherein ~~said~~ the data once decompressed comprises a plurality of transform coefficients, and each transform coefficient is

expressible in a format comprising a plurality of bit symbols, the computer program comprising:

entropy decoder means for entropy decoding an encoded bit symbol of a current transform coefficient based on a context of a number of surrounding bit symbols and on whether the most significant bit symbol of the current coefficient has been previously entropy decoded, said context being based on the number of non-zero transform coefficients surrounding the current transform coefficient;

repetition means for repeating the operation of the entropy decoder means a predetermined number of times for the current transform coefficient; and

generation means for generating another transform coefficient in accordance with the operation of the entropy decoder means and the repetition means.